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ABSTRACT

The research described in this paper was conducted over a 4-year period at Orangecrest Elementary School, a new school in a Southern California urban district, which adopted Integrated Thematic Instruction (ITI) at its inception. ITI, developed by Susan Kovalik, is a tightly structured program based on the idea of year-long themes which are broken down into monthly and weekly increments. Inquiry learning is the basis for ITI, in which all learning is seen as connected and interdisciplinary. Data were gathered through observation and participation in operations of the school and individual classrooms, interviews with key personnel, and planning and evaluation discussions. Teaching philosophy and classroom activities are detailed for three teachers, at the kindergarten, first-grade, and sixth-grade levels. The findings of the report include: (1) ITI was implemented in nearly every classroom at Orangecrest, though with significant teacher variations; (2) there was no direct or indirect policy attendant in the selection of ITI for the school, nor was the program evaluated after it was implemented; (3) the strong leadership of the principal was crucial to the selection and implementation of ITI; (4) teachers found that ITI reflected and articulated their beliefs about teaching and learning; (5) while no figures have been specifically called to address academic achievement, Orangecrest students score well above district averages on standardized achievement measures. Two figures present the data and five appendices contain the theme and skills maps for the various grades. (Contains 25 references.) (ND)

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Integrating the Curriculum: The Case of an Award-Winning Elementary School

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I. Introduction:

Sherry and Jennifer, two sixth graders at Orangecrest Elementary in Southern California, excitedly step up to the front of their classroom to share the project they have been working on for the past four weeks. Their teacher, Mrs. DeAnza, has called for volunteers to share their work. Since every one of the thirty-four students in the class volunteers, Mrs. DeAnza rearranges the daily schedule to provide more time for student presentations.

Sherry and Jennifer spend a few moments setting up their project--a model of the river irrigation system of ancient Egypt. A bucket of water is the Nile River, a potted plant represents the fields to be watered. The central feature of the project is a simple machine, operated by two people, which enabled the Egyptians to lift water from the river and deposit it in irrigation ditches without having to haul it. Pieces of the machine include a bucket (a margarine tub), the lever (a piece of thick dowel), the fulcrum (plywood steepled for support) and the counterbalance (a "rock" made of a soft heavy ball). The girls demonstrate to the class how the machine operates to save labor and makes it possible for the fields to be watered by only two people.

After their demonstration, which is assisted by note cards they have prepared, Mrs. DeAnza asks the rest of the class to submit their questions to the presenters. Students eagerly ask questions ("How did this make their work easier?" "What is the purpose of the counterbalance?" "When did the Egyptians figure this out?"), and Sherry and Jennifer field them deftly. As the spate of questions dies down, Mrs. DeAnza asks the girls for their written report. The next student selected to report is David, who has elected to do his project by himself. He has surveyed thirty people in and out of school about what they believe happens after death and contrasted their answers with what the Egyptians believed. Two girls follow David with their invention, a plausibly engineered "air conditioning system" for the typical Egyptian house. They have investigated the climate and the architecture of Egypt and connected that knowledge with their own cultural penchant for modern conveniences. Two other boys have constructed plywood and plaster of Paris models of several pyramids, including cross-sections showing the internal plans as they evolved over time. A key explains each numbered part.

The promise of integrated instruction is the *connection* of knowledge and the holistic relationship of the subject areas, as illustrated by the foregoing example of students who have completed projects which combine research with content area knowledge and exemplify to varying degrees the synthesis of such information. I have spent four years observing in classes at Orangecrest as part of my research on this California Distinguished School, which opened five years ago with the entire staff using Integrated Thematic Instruction or ITI (Kovalik, 1992, 1987). Mrs. DeAnza has taught here from the beginning; she is a mentor teacher who conducts training sessions for new faculty in the ITI method and she talks enthusiastically about her teaching.

Inquiry learning is the basis for Susan Kovalik's Integrated Thematic Instruction (ITI), where all learning is seen as connected and interdisciplinary. Yearly themes are selected on the basis of their appeal to children's curiosity, and whether they provide a unifying concept for all content and skills to be taught during the school year. This year Mrs. DeAnza's theme is "The Idea Machine" and students are engaged in creating a theme park which represents the cultures they are studying.

Monthly components are developed for the theme into which each "subject" area is related to the theme through a collaborative process of "mapping." In collaboration with other sixth grade teachers, Mrs. DeAnza "marries" district-mandated skills objectives with the core literature for language arts and social studies, then finds natural linkages with science and mathematics. A year-long skills map is created, divided into sequences which coincide with the school's year round schedule.

Key points, the common core of knowledge selected by the teachers to identify the ideas on which to focus, can be likened to objectives and are taught by direct instruction. Multiple sources of information, including primary and secondary sources, are collected to support the key points through inquiries, to avoid "textbook dependence," and to provide a "rich environment" for the child. Inquiries are investigations (usually activity based) that children undertake to bridge between process and product. These activities, planned by the teacher, support the theme, take into consideration Howard Gardner's (1983) Multiple Intelligences, and are often structured around Bloom's Taxonomy (Bloom, 1956), or as Kovalik has named them, Ben's Six Quickies (Kovalik, 1992, 1987). Weekly and daily plans follow, but time blocks are kept as flexible as possible.

At the time I observed the above lesson, students had just finished reading *The Golden Goblet* , a historical novel about the ancient Egyptians. Prominent in the class was a

"timeline" students made of yarn which began with the formation of the Earth and proceeded to modern times. The yarn was looped continuously around the top of the walls, and back and forth across the ceiling to give students a concrete idea of how long geologic time is and how short man's presence is on the planet. Chronological milestones such as "the appearance of man" and "rise of Egyptian civilization" were carefully measured by students and marked with hand lettered tags. Sixth grade social studies in California proceeds chronologically from the ancient world up to the fall of Rome, so the humanities (English/Language Arts and Social Science) curriculum reflects that progression. Beautifully illustrated maps of Egypt drawn by collaborative groups graced one bulletin board. Student math journals reflected students' study of geometry and how it was used by the Egyptians.

The above example of Integrated Thematic Instruction (ITI) in action serves to illustrate how an innovative curriculum may be implemented in certain elementary schools, and serves as the subject of my research.

II. The Study

This study investigates the enactment of Integrated Thematic Instruction (Kovalik, 1992) at an award-winning elementary school in Southern California. The questions to be answered include:

1) What is Integrated Thematic Instruction (ITI) and how is it implemented at the school?
2) What policy and curriculum issues led to its adoption on schoolwide basis?
3) What effect did the leadership of the school principal have on the adoption of ITI?
4) What pedagogical and epistemological issues had to be addressed by teachers in order to make the change?
5) What effect has ITI had on academic achievement and on the school culture?

III. Theoretical Framework.

Educational reform in the past decade has sprung from a revolution in the way in which learning and teaching have been reconceptualized (Brown & Bruner, 1994). Most theorists believe that learners construct their own knowledge based upon their experiences and move from a crude grasp of the whole toward a more sophisticated grasp of the whole (Fosnot, 1992; Wiggins, 1993). Most of us no longer accept the behaviorist model of

decontextualized learning in which discrete parts are eventually assembled into a meaningful whole.

Literature-based language arts instruction has meant that teachers have been encouraged to build curriculum units around literature pieces and across the subject areas (Grisham, 1993). A theme is a way of extending the idea of the curriculum unit beyond a single piece of literature such that various texts, including literature pieces, act as resources to support an overarching idea or concept (Pappas, Kiefer, & Levstik, 1995). Schema theory (see, for example, Ruddell & Unrau, 1994), where the student is believed to form ever more complex and interconnected representations of knowledge, informs the conception of integrated curriculum.

Integrated curriculum is currently receiving attention from researchers (see, for example, Lapp & Flood, 1994; Lipson, Valencia, Wixon & Peters, 1993). However, Integrated Thematic Instruction (Kovalik, 1992) is not widely known in researcher circles and, despite the fact that ITI is currently being implemented in elementary schools in California, little is known about its effects on student attitude and achievement. Kovalik's ITI is a tightly structured program based upon the idea of year-long themes which are broken down into monthly and weekly increments. Major premises of ITI are that all subject matter learning should be connected and that a system of delivery to students should be brain compatible (Caine & Caine, 1991). ITI also supports teacher construction of thematic units in collaboration with other teachers over academic subject matter.

IV. Methodology.

The researcher spent two years closely associated with Orangecrest Elementary School, a new elementary school in an urban district which adopted the ITI model at its inception. During that time, I supervised two cohorts of student teachers at the school, and interacted with students, parents, student teachers, teachers, and administrators. A third year was spent in periodic contact with school personnel. During the past (fourth) year, I have formally interviewed key informants, including three teachers, the principal, and a district office administrator. I also spent time observing in the classrooms of key informants and collected various artifacts to assist in describing the ITI program.

Over the four year study period I have observed and participated in the operations of the school and many individual classrooms, informally interviewed teachers and the principal on several occasions, and been involved in discussions of planning and evaluations of

efforts on thematic units. Focal teachers provided copies of thematic planning documents, lesson plans, and curriculum materials. The principal has remained an enthusiastic informant on many of the challenges of implementation. I have examined School Report Cards issued formally by the district, as well as school issued documents on demographics and test reports.

A narrative case study (Merriam, 1992; Yin, 1984) of the school reflects the history and the day-to-day operations of a school in which Integrated Thematic Instruction is virtually universally adopted. The primary method of analysis of the observed data is interpretive. Where the data suggested themes or insights, specific evidence is cited. Triangulation of the data from sources such as lesson plans, semantic maps, interviews, observations, district and state mandated curriculum materials, and supplementary curriculum materials support inferences made from the data. Focal teachers and the principal have acted as both informants in the emic sense, as well as co-analysts of the data (Ericksen, 1986).

Descriptive statistics include achievement data for state and district mandated assessments. Other informal classroom assessments and teacher judgments are also incorporated into the analysis.

In 1993, Orangecrest was awarded the California Distinguished School citation. Virtually every teacher is implementing the Integrated Thematic Instruction methodology. Academic achievement has risen; particularly of note is that minority students' standardized test scores have risen "dramatically."

Integrated Thematic Instruction requires enormous investments of time and effort to assemble the multiple resources necessary to teach thematically. Intense pressure exists at the school for teachers to be the "best" and teachers have continued each year to expand and improve upon their pedagogical skills. In 1993, the school went to a year round schedule which makes it difficult for teachers to create the rich learning environment recommended for ITI when rooms are switched several times in a year.

Despite logistic challenges, declining budgets, and increasing class sizes, the principal and the staff remain committed to ITI, and morale remains high. Results of the study are essentially complete, however, interaction with the school has continued, and data received as late as March 1995 has been included.

Orangecrest Elementary School is a successful model of the ITI methodology and as an exemplar is worthy of study. Integrated Thematic Instruction (Kovalik, 1992) is one

example of many ideas about integrating the curriculum. ITI is a very closely structured method which emphasizes academic achievement. Other methods (see, for example, Cordeiro, 1992; Enciso, 1994; Lapp & Flood, 1994) may be more child-centered or emphasize academic achievement less in favor of social agendas. By examining ITI at Franklin School we may serve the inductive compilation of local knowledge to inform theory, and its relationship to practice.

V. Integrated Thematic Instruction (ITI)

Susan Kovalik, a prominent educational consultant, is the author of two books. The first, *Teachers Make the Difference*, was published in 1987. The second, *Integrated Thematic Instruction: The Model*, was published in 1992 and "replaces" the first book. A literature search failed to locate a single refetence to ITI; to date I have discovered no published evaluation of the program.

ITI is based upon the following three interlocking, interdependent principles: (1) teaching strategies, (2) curriculum development and (3) brain research. The cover of the book is illustrated by a Venn Diagram containing three overlapping circles; where the three meet is characterized as "integrated thematic instruction."

The program is billed as being "brain compatible" and research on the human brain undergirds the philosophy and pedagogy of ITI. Eight components are seen to have "a direct connection to improved academic performance for both adults and children." (p. xii) These eight components are: absence of threat (trust), meaningful content, choices, adequate time, enriched environment, collaboration, immediate feedback, and mastery.

The work of Leslie Hart (1983) is quoted most directly. In Hart's work, the brain is triune; that is, there are three evolutionary layers to the brain. The oldest part (over 200 million years old) is the "reptilian" brain which is characterized by "fight or flight." When we are threatened we "downshift" to this primitive area. The second part of the brain, the limbic system, is referred to as "the old mammalian brain" and is 60 million years old. The limbic system is home to the emotions and has visual memory but limited language. The most recent evolution of the brain, the cerebrum (or new mammalian brain) has been a part of us for only a few million years, and is the seat of academic learning, because it houses language, symbols, and images.

The three parts of the brain are not fully integrated; instead, the individual shifts back and forth between the functions of each. Therefore, the student in a classroom must have an

environment where he or she can remain "upshifted" into the cerebrum. When the student feels threatened (whether or not the threat is real) s/he will downshift into a more primitive part of the brain, at which time learning becomes problematic. Accordingly, the teacher must design curriculum and establish a learning climate which nurtures the student. The student, in return, follows suggested guidelines. Rules for maintaining the social compact apply to all: TRUSTWORTHY, TRUTHFUL, ACTIVE LISTENING, NO PUT-DOWNS, and PERSONAL BEST.

In the second principle, meaningful content, Kovalik espouses a curriculum which is "authentic" and outlines several factors which contribute significantly: curriculum is from "real life" or the natural world around us; depends heavily upon prior experience; is significant to membership in a learning club in which the learner holds full membership; is age appropriate. This type of learning is best because the brain is a "pattern seeker and self-congratulator."

Choice, the third principle, refers to the ownership of learning. Kovalik quotes Gardner (1983) on the multiple intelligences: logical-mathematical, linguistic, spatial, bodily-kinesthetic, musical, intrapersonal, and interpersonal. Kovalik's guidelines for choice include guaranteeing that choices are genuine and learning experiences truly varied according to the seven intelligences, the "19 modalities" (senses), and the level of Bloom's Taxonomy (Bloom, 1956). Choices should include playfulness if possible, and should immerse students in real life and firsthand experiences.

Adequate time, the fourth principle, refers to the fact that humans learn from the totality of their environment, not just from what they or the teacher are focusing on at any given moment. Kovalik states that learning needs to be "deeper;" that is, "we need to do less and do it better and more in-depth, giving students time to 'use' the information again and again in varying settings until the information is recallable in a usable form, i.e., a behavior, a *program*." (Kovalik, 1992, p. 63).

The enriched environment (principle five) promotes "maximum dendritic growth" through engagement of the 19 senses (Kovalik, 1992, p. 71). Hart (1983) calls for an increase in classroom "input" of at least ten times that of today. An enriched environment also means the acquisition and use of far more resources than the just the textbooks in use in many classrooms.

The sixth principle, collaboration, is vested in the idea of problem-solving in groups. The principle of enriched environment is implied here, because when students collaborate, input to each student increases over and above what a single teacher can provide.

The seventh principle, immediate feedback, is necessary to learning. Learning is its own reward which produces a chemical "high" for the student. Kovalik recommends that we let students give feedback to each other and that we use formative assessment more frequently than summative. The idea is to build on the learner's strengths and assist them to assess their own growth.

Mastery, the eighth and final principal, counters the current trend of low standards and expectations for students, as well as the destructive use of the "Bell Curve." Mastery--not to be confused with mastery learning--should be conceptualized as "competence." A student's knowledge and sense of his/her own competence supports self-esteem and empowerment of the individual.

The ITI curriculum is integrated and thematic. It begins with the creation of a yearlong theme with monthly components and weekly topics. Then, key points are identified. Key points are the important learnings for which all students are responsible, are taught mostly by direct instruction, and they form the basis for assessment of learning. Finally, inquiries and activities are planned which give students opportunities to understand and apply the concepts/skills of the key points.

> "True teacher empowerment comes from the ability to see the connection between personal philosophy and district/school goal objectives, while at the same time honoring the natural quest for learning that children bring with them. Thus, it is essential that you align your curriculum planning with your district's scope and sequence, which in turn is likely based upon state recommendations and guidelines. Do not 'strike out on you own.' For your students' sakes, you must do your share to ensure that they have a comprehensive (no holes or gaps) and articulated (no repetitions) content education from year to year, K-6." (Kovalik, 1992, p. A-9)

It becomes apparent, from the above quote, that what Kovalik envisions is a rigorous academic program which is teacher- rather than student-driven. For example, key points are those areas which the student must master. They are taught through direct instruction. The

students then "fix" this learning with activities and inquiries. We can contrast this system with Patricia Cordeiro's (1992) vision of "coordinated curriculum" in which the teacher sets some of the goals, but then steps back and lets the students carry out the inquiries according to their own interest and curiosity.

The hierarchical structure of ITI emerges as we look at the context in which it is used.

VI. Orangecrest School

Orangecrest School sits at the top of a knoll in a new development of middle class homes. It is a modern school, having been built in 1992 and occupied in September of 1992. Orangecrest sits at the edge of one of the oldest cities in Southern California, and is thus part of an urban district containing twenty-seven elementary schools. Students are bused throughout the urban district to balance the ethnicities in the student population. Most of the students of color who attend Orangecrest are bused in. A personal communication with the school secretary (March 28, 1995) gave enrollment data through January 1995, and school records confirmed that the ethnicity distribution for Orangecrest is White 62%, Latino, 20%, African-American 7%, Asian 5.5%, Filipino 4%, American Indian .4% and Pacific Islanders .8%. Total enrollment for the school numbered 953 students.

District published "School Report Cards" currently are available only through the 1992-93 school year--a lag of almost two years, but the official district publications indicate that the ethnicity balance has remained constant since 1990, when the school opened with an enrollment of 462. The growth indicates the general high growth of new homes in the area, which were, until recently, agricultural lands planted to citrus crops next to a large military installation.

The school operates on a K-6 configuration, with students exiting to a traditional junior high school which is "fed" from several such schools. Classes at Orangecrest are self-contained, and the class size average is thirty, which is higher than the state average of twenty-nine (figures are from the latest "School Report Card" for 1992-93). As is usual in California schools, class sizes tend to be smaller at the primary levels, and larger at the upper grades. The focal sixth grade class, for example, contained thirty-four students. The school has support services available: a part-time Speech and Language Specialist, a School Psychologist, a part-time Special Education Resource Specialist, an on-call School Nurse, a part-time Categorical Program Specialist who manages special programs, and a Library

Clerk. There is a Principal and an Assistant Principal. In July 1993, the school went to a year-round schedule with four "tracks."

For the first two years of its operation, the school was housed in a temporary site at the Southern California campus of the California School for the Deaf. The district has pursued a policy of renting these facilities for "new" schools, and busing children from the attendance district while the new campus is constructed. This policy stands in contrast to other "high growth" districts in Southern California, who tend to house "new" schools in portables, sometimes for years, until funding is available to build. Orangecrest is situated on a ten acre lot, contains twenty-six permanent classrooms, a library, and an outdoor and an indoor cafeteria. Like all newer schools in Southern California, it is completely air-conditioned, and landscaped with drought-resistant vegetation. The exterior is white-stucco, there is a large grassy playground as well as a blacktop area for play.

Classrooms are considerably smaller than in older schools, primarily because there was a move to reduce class sizes during the reform era of the 1980s. Classroom sizes were reduced; class sizes were not. In the upper grades, where students are approaching adult sizes, and where class sizes range up to 35 or 36 pupils, the classrooms sometimes seem claustrophobic. Each group of classrooms fronts onto a "patio" which is paved and has benches. Teachers frequently use this area for group work, or the classes "spill" into the area.

In the classrooms themselves, the accouterments are very modern. "Whiteboards" are backed by traditional green chalkboards, and there is storage behind that. Each room has its own overhead projector and screen. There are ample cupboards, but since the school has gone year-round, the rooms also now feature rolling cupboards as the teachers must change classrooms every three months. Furniture is new, and features tables which seat two students. These are frequently pushed together in various configurations for student group work.

The 1992-93 School Report Card indicates that the percentage of teachers on staff with Master's Degrees or beyond is 20%, and that the average years of teaching experience of the staff is eight years. There were 30 teachers on the staff in 1992-93. This year 1994-1995, eight of thirty-one teachers are mentor teachers--a very high number of district mentors for one school. The three focal teachers in the study, Mrs. DeAnza (sixth grade), Mrs. Booker (Kindergarten) and Mrs. Cutter (first grade), are all mentor teachers. All have been at Orangecrest since it opened in 1990 and the last two elected to come with the site

administrator, Dr. Howell, from a previous school. In fact, fully 50% of the tenured teachers who first came to Orangecrest in 1990, are still at the school.

Dr. Howell, the principal of Orangecrest Elementary, is tall and has a commanding presence, with a formidable reputation in the district. She earned a Ph.D. in Educational Administration from the local university, and has been employed with the district for over twenty years in varying capacities. In her previous position as principal of Queen Anne elementary school, Dr. Howell, became interested in ITI, when a team of her teachers went to a training session. Later, the district brought Kovalik in for a week-long training which was hosted by Dr. Howell's school. Sold on the method, Dr. Howell applied for the principalship of the new school with the idea of making it an ITI school. Five of the teachers at Queen Anne applied at the same time for transfers to the new school, and started the new school with Dr. Howell. All five are still with her.

Orangecrest is the only school in the district based solely on ITI, and the program has almost completed its fifth year. How did it all start and on what basis were the initial decisions made?

VII. Orangecrest -- The First Year

According to Kovalik (1992) it takes several years to transition from traditional teaching methods to the ITI method, but at Orangecrest, the teachers were eager and determined to begin total integration of subject matter. Every potential teacher who was interviewed to work at Orangecrest was asked about his/her attitude toward teaming, hard work, and willingness to try using the Kovalik method.

Twenty-one teachers and the principal formed the first contingent to have the Kovalik training. At that time Kovalik gave week-long summer training sessions in Lake Tahoe. Dr. Howell recalls, "So we spent the week there and that's where everybody got their...you know... basic training. I had twenty-one teachers, but only twenty went because one was very sick, and so she couldn't come with us. And so what we did for her was that everybody at her grade level really chipped in and helped her. Then when the next training time came around here in our district, we sent her."

When asked about how she could afford to send twenty-one people to a week long training, Dr. Howell stated that she "finagled" the money from various sources including mentor money, start up funds, a small grant, and money begged from the district office.

In fact, ITI had at least one strong friend and ally in the district office, Karen Porter, who was in charge of coordinating staff development for the district, as well as being in charge of certain categorical programs such as Gifted and Talented Education, and Special Education. Now a principal at a district elementary school, Karen graciously gave me a lengthy telephone interview about her recollection of how Orangecrest came to be an ITI school. According to Porter, she was the one attending a conference where she "happened into" a session given by Kovalik. She was "very impressed" with what she heard, and went up to speak to Kovalik after the session. Porter found out that Kovalik would be presenting a session at a conference near Porter's district that summer. Porter had about 40 teachers doing summer inservice and arranged for a "field trip" to the local conference where Kovalik was presenting a session on ITI. The teachers were every bit as much "taken" with Kovalik and ITI as was Porter. They asked Porter to bring Kovalik in for a week long training session in the fall. Porter did arrange for Kovalik to come for a week and the session was hosted at Queen Anne school, where the principal, Dr. Howell, attended much of the time.

The temporary facility where Orangecrest was housed for its first two years was unprepossessing, to say the least. The buildings were old, and not in good repair. Acoustic tile ceilings, for example, were discolored from water leaking from the roof. Some tiles were broken and some sagged. Students from the attendance area all had to be bused miles from their homes as the distance from the permanent site to the temporary site was over five miles. Once there, students were being taught using a new method which made some district parents uneasy. There was no existing school culture to rely on--the principal and staff, many of which were younger, less experienced teachers had to build such a culture, and in doing so to "prove" themselves to parents. This proved unexpectedly difficult.

The ITI method advocates the use of natural lighting and a homelike atmosphere. Teachers brought in personal effects such as small lamps and potpourri pots for their desks and throw pillows for students to use when reading on the floor. Another recommended innovation, the playing of soft music while children worked was often used. Finally, students were frequently asked to "visualize" things they were learning. Some parents became alarmed about such "New Age" touches in the classroom. Although Bloom's (1956) taxonomy was hardly innovative, some parents were concerned with the idea of "critical thinking" as it implied the questioning of authority inherent in texts, in particular.

Dr. Howell was approached by parents who demanded to know why their children were being taught such concepts as reincarnation and witchcraft. At first, she answered such

questions on a one-to-one basis, but she found that the rumors continued to grow, and that her teachers were upset by all the unfounded accusations. A meeting was called in October of that year, which over a hundred parents attended. Dr. Howell had done her homework. She said, "I mean I did my research. I got out the [district] course of study. I found where it said...because they were talking about visualization and that kind of stuff...I got out the course of study, where it talks about spelling, you know, and tells kids to visualize the words...this kind of thing. I had the transparencies ready and I hit everything. First of all, I explained the [ITI] program and then I hit every single rumor that I had heard....I said we do not teach reincarnation at Orangecrest. We do not hypnotize students at Orangecrest. We do not teach yoga at Orangecrest....When it was over three-fourths of the people got up and left." Dr. Howell handed out cards for questions and answered every single one, staying until past eleven P.M. for some ten people, some of whom were "fundamentalist Christians." Members of the PTA had also stayed and one woman in particular, herself a fundamentalist, defended the school.

In February, four parents came again to complain to Dr. Howell. After that meeting, the opposition seemed to dissipate. As Dr. Howell stated, "They turned around and walked out. I never heard from them again." Although there has been no recurrence of the criticism of the first year, Dr. Howell still feels bitter about how hurt the teachers, especially the new teachers, were that first year. "You don't have a culture that you have established before you get here and so...I knew that part had to be established quickly. I also knew that with parent groups, you would have to pull them in and be sure that they knew and understood what was going on. I knew all of that, but this was like, really, out of left field. Right field, actually. But you know, it was something that I would never ever have thought about."

Orangecrest is now in its fifth year of operation and parent opposition seems to be a thing of the past. Teachers commented that they have learned to be very particular about what they say to parents about such things as "critical thinking" and they've learned to downplay such "New Age" elements of the program as music playing while students work. Instead they address the academic benefits of ITI. Teachers say that parents are ecstatic that their children are eager to come to a school that engages them with meaningful learning tasks, instead of the rote learning tasks they remember with distaste from their own school days.

VIII. In the Classroom

Leigh Booker's "afternoon" kindergarten class is lined up outside the door at 10:00 AM waiting to come into class. Many carry brightly colored drawstring "homework" bags. As they come in they seem to swarm over the classroom like bees executing various duties. They move clothespins to indicate they are present, they hang up coats, deposit homework bags on the table, hand notes to Leigh, and generally manage their own entry into the world of school. Leigh seats herself in a large rocking chair at the back of the class and waits as each student finds his or her way to the rug. The first half hour of the day is devoted to "calendar" based on *Mathematics Their Way* (Baratta-Lorton, 1975) and on the "inquiries" which are placed in their homework bags to go home, and are then examined in class. After this sharing and the many counting and sorting activities that are developmentally appropriate for students of five and six, they go outside for a half-hour of play, then to lunch. At 11:45 AM, students return to the classroom where they get books from the bookcases or from their cubbies to read. Some get pillows and lie on the floor with their books, either by themselves or in small groups. Some sit at tables, while others examine a rack of Big Books hanging by the window. There is a buzz in the room, not particularly noisy, as students share their books with each other.

At noon, Leigh rings a cowbell for clean up and the students hurry to return books to their places and get seated on the rug. Leigh reminds students that the purpose for DEAR (Drop Everything And Read) is to read and share books. Then Leigh takes out a book and begins to read by asking students if they see any clues in the pictures about what will happen in the story. Leigh reads the story, then converses with students about the story. This discussion is "open" in that no demands are made for children to raise their hands to speak, but follows the IRE pattern identified by Mehan (1979).

Next, a boy named Danny requests a book called *The Earth and Sky*. This is a book they are reading (and re-reading) on the solar system. Leigh reads the book, then focuses on selected portions. First, she demonstrates "craters" with a tray of flour and a marble on a string. The marble is an "asteroid" which flies through space and crashes into the moon. The students now move into a large circle so Leigh can move around to "show" smaller groups of students how the asteroid makes a crater. Leigh draws an analogy from the model of marble and flour to the "model" of earth which is the Earthball with which the students are already familiar.

About 12:30, the directions are given for students to move into their thematic "centers." Leigh explains each center carefully. The explanations take about 6-7 minutes because Leigh wants to make sure every one understands. Finally, she rings the cowbell for students to go to the centers.

At one table, with Leigh, a group of students are taking a stars "test." In one minute they draw as many stars as they can, then they count the stars they have drawn and record the number. They are trying to beat their own records and they must choose options for separating their first trial from their second trial.

At a second table, a group is graphing with moons. A third group is engaged with "Day and Night" books. A fourth center is an art center featuring the cow jumping over the moon. A fifth table has children completing a day/night pattern. The sixth center is the carpet where students have individual chalkboards for making stars. The seventh center is the tray where the marble "asteroid" makes "craters" on the floured surface of the moon. The eighth center is a dice toss, where the student records on a sheet how many times each number comes up (probability).

In this classroom, every nook and cranny seems filled with student work, or with environmental print of some kind. The theme for all four kindergarten classes, "We are all alike, We are all different," is posted on one wall. On another wall is a poster that reads: Standards for Life: Truth, Trust, Respect each other, Active listening, and Personal best (Kovalik, 1992; p. 22). There are the Super 8 rules, which I find in every classroom I enter. The super 8 are talk it over/listen, walk away, say "I'm sorry," do something else, take turns, share, ignore it, and ask for help. "Megaskills" from the parent packet I have obtained are posted. They are: Confidence, Motivation, Effort, Responsibility, Initiative, Perseverance, Caring, Teamwork, Common Sense, and Problem Solving. Each one is defined more concretely for the children; for example, confidence "means that a child feels that he or she is able to do something."

There is also a "Letters that we've looked at" chart with b, f, h, l, m, n, p, s, and t circled, while a, e, i, o, and u are underlined. A "Writing Workshop" five day plan is posted.

I leave reluctantly at 1 PM and students are still engaged with the center activities.

Earlier that morning, in Lorraine Cutter's first grade class, I found twenty-eight students already sitting on the rug. This year's theme for the first grade is "Our Magic Schoolbus." An entire wall of the classroom is devoted to a colorful illustrated outline of the

theme--what students will be studying and when. The magic schoolbus, replicated in bright yellow, will take students inside the body, to the waterworks, inside the earth, to the ocean floor, and finally will be "lost" in the solar system.

Lorraine's students are discussing a book they have just read, *Mike Mulligan*, and are comparing the steam shovel in the book to a poem by Rowena Bennet called "The Steam Shovel." Lorraine reminds all students to bring their tractors and dump trucks from home on Friday, so that they can study machines together. Students get excited so Lorraine begins a chant and clap sequence that calms them down, and they continue to discuss dump trucks, tractors, and earth moving machines, with students sharing their experiences and the kinds of equipment that they own.

After a few moments, Lorraine stands up and invites the students to do so in order to sing. They sing a song they have written as a class about machines. Next students move to their tables as Lorraine compliments them on sitting quietly for so long. The table groups are named for streets in the city. Lorraine brings out a basket of books, and suggests students try reading on their own, using a "rule of thumb" test. Lorraine demonstrates with a book, showing how as the student reads the first page of the book, he or she puts up one finger for each word not known. If all five fingers (the thumb is last) go up before the first page is read, then the book is too hard, and the student should exchange it for another. She then "drops" a book by each student, saying that in the future they will choose their own books, but for today only she will hand them out just for practice. Students begin to read immediately. The classroom is noisy, because most of these students are still reading aloud. Some students reach the rule of thumb and put down their books. Not all are finished reading when the bell for recess rings, but Lorraine encourages them to go outside anyway. As they go, I overhear them talking about how easy their books were to read and how many fingers they held up.

During the recess, Lorraine and I chat, and I have a chance to look at the room environment, which I can only describe as "cluttered." Lorraine is one of those teachers with piles of books and papers everywhere. The walls are filled. There are the Super 8 and the Megaskills, as in Leigh's class. At the front of the room is the evidence of a new schoolwide spelling program (information about this program was included in the parent packet). A "Handy Words" chart listed words such as "and, like, it, and we." A poster bragged about "No Excuse Words" like he, the, I, a, to can, see, and am. A pocket chart and science (evaporation) experiments were also prominent.

As the students came in from recess, they went to their tables, and Lorraine announced it was "chalkboard time." Students took out individual chalkboards and socks with a chalk piece in them. Lorraine dictated a word and students wrote what they heard. Then students helped to orally construct how they thought the word would be spelled. The constructed words were then compared to the conventionally spelled word, and students were asked to make corrections on their chalkboards. Four words, past, cap, trap, and clasp were spelled in this way. Lorraine would frequently give clues. On clasp she might say, "this is a word with five letters. Listen for all five sounds." Then she used the word in a sentence. One student insisted the correct spelling was klasp. There was a lengthy discussion over this. Finally the word could be erased by a student giving a rhyming word such as "rasp."

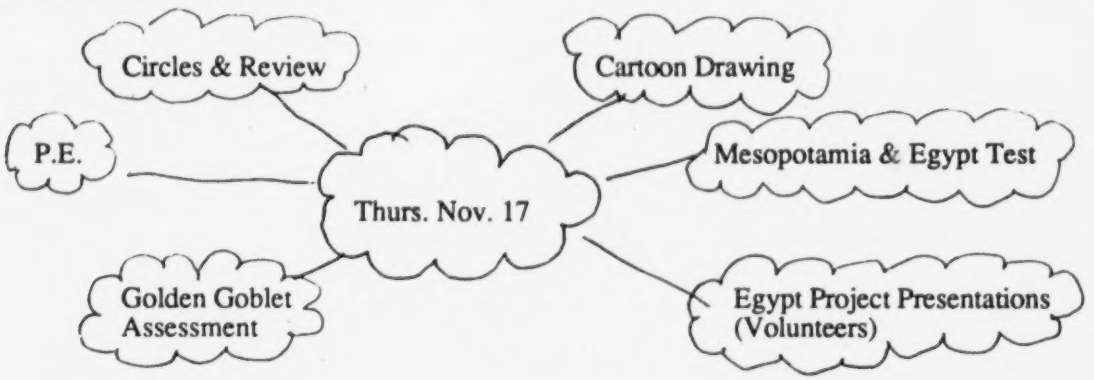
As this lesson continues, Lorraine sends a student named Alice over to me with her reading log. They have been reading a book about popcorn, and Alice has written the title, her favorite characters, and her favorite part of the story. It is obvious to me that Alice has been using conventional spelling for a while. It is the middle of November, and students have been in school since the first of July.

The students ask Lorraine if they can sing the song they made up and Lorraine agrees. The song was written to celebrate a themed week called "Addition in a Week." During this themed week, almost every minute of every day was devoted to learning the concepts and the skills associated with addition. Students participated in learning centers with parent volunteers all week, in which they did things like hopscotch add-ons, bean counting on, or fact bingo. Now they sing, with gusto:

"I'm a lean mean adding machine
I can add any numbers that I've ever seen.
People say ooh, ah, ooh, ah
I'm such a lean mean adding machine
Bodily-ahh, da, a wiggle, wiggle, wiggle (3 times)
I'm such a lean, mean, adding machine!

The students really get into the gestures and refrain, and insist on doing it twice. After that, some older students come in. They are coaches for the first graders on the playground, where skills activities such as long jump, tether ball, and relay races will be held. Soon everyone goes outside and I continue to another class.

During the introduction to this paper, I described some of the activities in Mrs. DeAnza's sixth grade class. This classroom was being stripped of its riches because it was going off track that day. As I walked in, Judy DeAnza was reading aloud to students who were allowed to draw or work on other activities. Students again sat in table groups, and as there were 34 students in this class of sixth graders, the room was crowded. On the whiteboard at the front of the room was written a class schedule that in my four years at Orangecrest, I had come to recognize as the non-linear method of time blocking for integrated activities:



On the other side of the board were listed the vocabulary words: translation, rotation, reflection, symmetry, equilateral, scalene, isosceles, congruent, similar, chord. After students had shared their Egypt projects, Mrs. DeAnza moved into mathematics. In this case, students were reviewing for an exam in geometry. Judy reminded students to use "Active Listening" before she began the direct teaching segment. Students were reminded to take out their journals to record the vocabulary for the test definitions. As she worked to define each word, Mrs. DeAnza drew a picture of it on the board. In defining pi, she commiserated with students that "its just one of those things in math you have to remember."

The math review lasted until students were dismissed to lunch.

In looking into the classrooms, it was apparent that although many subjects were linked thematically, a few items were still taught in a piecemeal fashion. In the kindergarten class it was the "calendar" time, which has become a ritual in many primary classrooms. In the first grade, it was the spelling time, when students learned words in a decontextualized manner, and in the sixth grade, it was the math review which was only peripherally linked to

the unit on Egypt (or to the Theme Park). Nevertheless, it was apparent that most subject areas were integrated into the overarching themes in use in each grade level.

IX. Teachers' Voices

Key informants in this study were all veteran teachers, mentor teachers in their district, and each had been at Orangecrest since its opening in 1990. The chart below gives specific information about their education and experience.

Name/Grade Level	Level of Education	Years/Experience
Leigh Booker Kindergarten Categorical Prog. Spec. Mentor--Mathematics	B.A. Liberal Studies M.A. Educ. Admin. Certificate--Gifted and Talented Education	14
Lorraine Cutter First Grade Mentor Teacher-Lang Arts	B.A. Education M.A. Education (Educational Psychology) Reading Specialist Credential	31
Judy DeAnza Sixth Grade Mentor Teacher-Science	B.A. Liberal Studies M.A. Education (Curriculum & Instruction)	8

Each of the teachers was interviewed and asked the same questions, but the interviews were open-ended and ranged, according to the nature of such interviews over various subjects. As previously mentioned, the interviews were audio taped and transcribed in full.

Leigh Booker was one of the contingent of teachers who attended a summer workshop series and went on a "field trip" with District Office Administrator Karen Porter to hear Susan Kovalik. For Leigh, listening to Kovalik speak brought a sense of recognition. "When I first heard her speak, she was saying so many things that I had already thought were true....it wasn't something that completely changed my thinking but it validated what I

had been thinking all along." For Leigh, hearing a "nationally known" speaker gave her a frame of reference for her own ideas and helped her form a theoretical and pedagogical rationale for her teaching.

Leigh feels that ITI's greatest benefit for students is that they are "happier." She sees them coming to school "carrying their little projects, and excited about what they're doing, excited about learning." When Leigh visits other classrooms, she sees that students are excited about what they are doing, and involved in learning. Even when students work outside on group projects "kids seem to stay on task and are really interested in the projects they are doing." Leigh feels that ITI teaches students "that learning is all connected." This happens increasingly as the students get older, Leigh feels, because "the little ones are still not knowing completely" when they are working.

Actually, for the kindergarten level, Leigh doesn't see much difference between ITI and what she always did. The major difference, she believes, lies in her increased attention to the multiple intelligences (Gardner, 1983), and the ITI framework for planning instruction around themes. Leigh keeps a list of activities for each "intelligence" that she refers to for planning classroom activities.

In terms of implementing ITI, Leigh had no substantive problems. She and other kindergarten teachers found with ITI that students could "go so much further in kindergarten than what our course of study says" that there needed to be articulation between the grades to ensure students did not get boring "repeats" in first and second grades of things they'd already learned about in kindergarten. Other things, such as learning about "long ago" were developmentally inappropriate, since kindergartners "don't know what yesterday is, so they get confused with the days." Science was "nothing" in kindergarten, for example, but has been augmented so that if students are developmentally ready for such studies, "it's there for them." For example, as we saw in Leigh's lesson sample, students are given choices from the first. They may choose which centers to participate in and when. If a student is having difficulty with such choices, Leigh says, "then I'll talk to them and help them out. Help them back up a little bit and start making some choices for them until they can."

Going to a year-round schedule has affected Leigh and three other kindergarten teachers to some extent. For example, they decided to try their theme, "We are all alike, We are all different" for a second year. They can leave the "theme board" up all year as they rotate classrooms. But kindergarten teachers always shared their classrooms and materials, and so the change is not as dramatic as for the upper grades.

Leigh states that the majority of parents have responded positively to ITI. "They love this school. They talk all the time about how much the children enjoy coming to school and how much they're learning, and they [children] learn so much more than they [parents] ever did when they were in school." Only occasionally does Leigh encounter the "rare" parent who "want the workbooks." Remembering the parent problems of the first year of Orangecrest's operation, Leigh says she is much more concerned with communicating ITI to parents. "You know, [ITI's] the same basic things that people have always been learning in school but now we're just organizing it to be connected." She says she downplays the critical thinking aspects which some parents took for "mind control and it was teaching them [the students] to question what they read and authority."

In the first grade classroom, Lorraine Booker recalls that she first found out about ITI when she attended the week-long Kovalik inservice at Queen Anne, where she was teaching under Dr. Howell. She said she felt the first impact of Kovalik's message in her classroom management routines. She "never felt the need to use" a behavioristic classroom management system again. Like Leigh, Lorraine says that Kovalik's message struck a responsive chord within her. "I think what it was about that experience was that it fit everything I was thinking. It also seemed a way that I could organize the curriculum into something that made sense." Since it was at the same time that Lorraine became interested in whole language, she felt "it was just like everything clicked."

Lorraine sees "excitement" as the main effect of ITI on students. She calls my attention to a science experiment on condensation which was supposed to take four days. "They're excited about different things that are happening, even when experiments don't work. You know, we've kept this thing up here. It was supposed to be done in a week and it's about the fourth week and it's time it was showing the effects of the water cycle." She feels that because children have the year mapped out for them in the theme, they "have a long range view of their learning." Students are sure about what they are doing, and they communicate this to parents. This communication helps when Lorraine invites parents into her class to share their "expertise" with all the students.

Lorraine feels that the "flow" of days is exciting. In fact, when she is forced to "stop for McCracken, it felt like it [the flow] just stopped." She believes that such systematic skills lessons "are necessary" at first grade, but she remains troubled by the disembedded nature of the McCracken program, musing, "What do I want to say? [With ITI] you can take any letter and tie it into anything you're doing."

Another positive aspect of ITI for young students is the "Concept in a Week." Primary grade students participate with their teacher and parents in "Addition in a Week" or "Subtraction in a Week." During the week, almost the entire day is devoted to the learning of concepts and memorization of "Addition." Students participate in all sorts of large and small group activities, and growth is measured by a pretest and a posttest. "We move from the really concrete hands-on [activities] to some of the final days [when] students are doing more and more of the recording. So they are actually getting to that point. And then I have stations following that depending on whether the child's 'gotten' them or not."

Leigh (the kindergarten teacher) is the author of the program, *Multiplication Facts in a Week*. While supervising student teachers at Orangecrest I volunteered to participate in a third grade class, for "Multiplication in a Week."

Lorraine also likes collaborative planning. She likes the give and take of group planning as well as the idea of knowing what's going on in other classes. She feels the joint planning process makes people very aware of the nature of the curriculum, and the need for articulation between the grades. In addition, she believes that children learn in more depth. "I mean if you learn that Mike Mulligan's steam shovel runs on steam and you learned all about steam, you can apply that to other things."

Lorraine cites "time" as the major problem with implementation of ITI, and that "even creative teachers need time to work it out and time to do it." Year-round school presents another challenge, one of logistics. The moving around complicates everything, especially for a teacher with as rich an environment as Lorraine's. In fact, Lorraine begged for and received an "extra" rolling cabinet for her materials (she has a total of four rolling cabinets). In addition, now teachers must think about the length of "units" because of the three month increments of the schedule. This sometimes leads to "slowing down" or "rushing" to complete things, a state which would not occur in a traditional schedule. In her second year of the year-round schedule, Lorraine feels she is getting a better grasp on pacing.

On Back to School night, Lorraine spends a lot of time explaining the ITI program and her developmental approach to teaching first grade. She assigns "a lot of interactive homework" which she says parents sometimes protest at first, but come to love for the opportunities to do things with their children. Lorraine is careful to invite parents into their student's learning processes. She tells parents that its important to keep moving forward, and keep learning things. Her teaching keeps changing because she keeps learning things,

and if she's not continuing to learn and change, then she feels she will quit teaching. "It's a constant search and that is hopefully what we are demonstrating to the kids, too."

Judy DeAnza's sixth grade classroom is quiet and uncrowded at last, as we sit down to talk about ITI. The least experienced of my three key informants, she is the one I feel I know best, since we were at graduate school together some years back. Judy is quiet and competent and to observe her in class is to know that she loves to teach, and enjoys the older students. Judy's former principal suggested that she go to Orangecrest with Dr. Howell, "as a good experience, which it has been." It was under her former principal that she became interested in ITI, when he sent her with two other teachers to Kovalik's training session in Santa Cruz. "I really didn't know a lot about ITI at the time, but integrating the curriculum sounded interesting, so I went and was completely blown away by the week." She felt such relief, she said, because she found that what she had been doing for two years wasn't working and that week "really opened my eyes to what teaching could be." Prior to ITI she had been "just stumbling around."

Judy started using ITI at her old school, integrating social studies and language arts, and "pulling in science when I could." She felt there wasn't much support for ITI at her old school, and was delighted when she heard about Orangecrest. She attended the training at Lake Tahoe, "which was really good, because it helped set in my mind, more. And then I had the support of twenty other teachers."

Judy believes that the strength of ITI is that "kids are so excited about learning. Things make sense to them. And so they start seeing connections and they go home and they see connections, and they're out in the world and they see connections." She believes that ITI "does definitely increase their retention of the knowledge, instead of just memorizing facts, because it makes sense."

The idea of a theme is a general, all encompassing idea that is a framework into which all the sixth grade curriculum fits and which is a "kid-grabber." If the students are enthused about the theme, they are more willing to look at all the different components of it in a more "focused" way. As previously mentioned, Judy's theme (the sixth grade theme) for this year is "The Idea Company." Students are designing a historical theme park. "They love theme parks. So now when we talk about early humans, they are starting to look at the curriculum. 'Oh, what can we do with our theme park?' They research what kind of food early men ate and say 'we can serve those foods.' They find out what kinds of tools they used, and say, 'oh, we can have these tools for sale as little souvenirs.' So they are more

interested, more excited about what they are learning because they have something to use it for." Students are more engaged with the learning, she maintains.

As for the challenges of ITI, Judy sees the biggest one as the "marriage" of the district course of study. "Theme or no theme, we've got to cover what's in the course of study." She finds it difficult to include some things into the theme. So she just teaches it separately, "and the kids understand that." She sometimes tries to fit these things into a day-long mini-theme.

A second challenge is the issue of time. She definitely views ITI as labor intensive. "There is so much work for the teacher to do in terms of being able to help the kids see connections. In order for me to do that, I need to see the connections, which means that I need to develop my background knowledge thoroughly. That means tons of reading, tons of taking notes for myself, so I can pull out all the key points, since thematic instruction is based on these key points that kids should know, and you teach those specifically in direct instruction. Then they do the inquiries and that leads the kids to reinforce their knowledge of the key points. If I don't know what the key points are, I can't teach it...."

When Judy first started using ITI, she felt most keenly the lack of resources. Being in an ITI school has meant that funding has been concentrated on building those resources schoolwide. In addition, much time and effort has been spent on staff development in ITI. When Orangecrest went year-round there was "a really big turnover in staff." And since any new teacher coming to Orangecrest gets trained in ITI, Judy has kept really busy. As a mentor she also provides support for new teachers. She stresses that new teachers should start off slowly, build their themes around their strengths, and focus on their passions. For a teacher to keep her perspective about thematic instruction is difficult at first. Some teachers relate well to "the big picture" of a yearlong theme and the integration of subject matter, but then lose sight of "what skills are going to fit where?" To avoid losing sight of skills that must be taught, teachers now make out a theme map and a skills map. The skills map "shows where each of the skills are going to be taught within the theme." Examples of theme and skills maps are included in the Appendix.

Judy also feels that year-round scheduling has cause pacing problems for ITI as well as the logistical problems of moving the classroom every three months. On the morning of "moving day" (which is a 'minimum day' for everyone in the school) the outgoing teacher must have her rolling cabinets packed to go, because custodians come in to remove them during the morning. The outgoing teacher must plan instruction for the morning without

books or other materials and must be out of the classroom by lunch time. At lunch time the custodians roll in the incoming teacher's cabinets, and the teacher has the afternoon to prepare the classroom for the arrival of students the next morning. Teachers have learned to be flexible and cooperative. As Judy states, "those teachers who aren't going off track on track change day have the afternoon...for planning, grading, and that kind of stuff. And those teachers have started to come into rooms of people who are setting up and helping."

Another downside to year-round scheduling has been that teachers who once saw each other on a daily basis now see each other far less often. The schedule contains four days per year when every staff member is on campus at the same time and "those times are used to reconnect." But Judy mourns "that feeling of cohesiveness" which distinguished the staff at Orangecrest is "slipping away." Staff works doubly hard to maintain vital connections among old and new teachers, and there is still a "family feeling" at Orangecrest that distinguishes it from many other schools in which I have observed.

X. Discussion

In the beginning of this paper, I posed several questions about ITI and its enactment at Orangecrest.

First, what is Integrated Thematic Instruction (ITI) and how is it implemented at the school? The complex, systematic, and interconnected nature of ITI has been explored in Section V of this paper. We have seen that, for these three teachers, ITI forms part of their belief system and acts as a framework for their pedagogy. As enacted at the kindergarten level, ITI acts as an organizer for centers and homework. Inquiries are activities in which students engage. At the first grade level, inquiries still tend to be activities, but centers have disappeared for the most part, and small group activities appear to engage the whole class. At the sixth grade level, inquiries may involve activities, but are also accompanied by reading and writing tasks, which are painstakingly planned at the grade level. Since the advent of year-round scheduling, each grade has a single theme which assists teachers in the logistics of moving their classrooms every three months.

Based upon evidence from teacher interview, observation, and thematic plans, it is clear that ITI is implemented in virtually every classroom at Orangecrest. While newer teachers may not be required to integrate every subject, they come to the school with the knowledge that this is what they will aspire to do. Every new teacher is trained in ITI by the strong cadre of trainers at Orangecrest (they do all the ITI training in the district) and

newcomers are supported by the collaborative grade level planning, the relationship with mentors on the campus, the high expectations of the principal, and the existence of a strong cultural imperative for ITI which has existed throughout the five years of the school's existence.

Notwithstanding the firm commitment to ITI, principal and teachers are quick to point out that they are not slavish in their adherence to the "system." When teachers find they cannot integrate some aspect of the curriculum they teach it separately without guilt. Modifications have been made: the skills map, the move away from an emphasis on "room environment." In addition, each teacher has her own way of enacting the ITI curriculum according to her belief system and personality. A subject of research I plan for next year is a close examination and comparison of teachers' ITI enactments at the same grade level.

Second, what policy and curriculum issues led to the adoption of ITI on schoolwide basis? As noted, there was no direct or indirect policy attendant upon the selection of this innovation upon which to found an entire school. In fact, Karen Porter, the district coordinator for staff development, stated no evidence was sought prior to the adoption of ITI as to its efficacy, nor was the program evaluated after it was implemented. In fact, Porter sought NOT to evaluate the effectiveness of ITI because she felt evaluations would fail to take into account its complexity. While this study does not pretend to be an evaluation of the program, it does define and describe what an ITI school is like. This year the school has been doing a self-study on the science curriculum, but the report is not yet available. It is my feeling that a carefully planned program evaluation effort which included both qualitative and quantitative data would prove enlightening.

That an entire school should base its operations around a program which has never been evaluated was a surprise to me. The ITI program as set forth in Kovalik's book is well organized and compelling in its systemic approach to integration of the curriculum. The research which is cited (from the Goodmans to Howard Gardner) is timely and accurate. Nevertheless, it appears that Kovalik's personal charisma had a lot to do with the founding of Orangecrest as an "ITI" school. For example, when Kovalik went to Queen Anne to give her weeklong inservice, the program was held in the school cafeteria, which was split in half. On one side were the cohort of teachers to be trained, each interested school having sent a "team." On the other side was a mixed age group of third to sixth graders which acted in the capacity of a laboratory school. One of Kovalik's teacher consultants demonstrated

ITI with these students all week as the trainees observed. The attendees were "blown away" by the inservice.

Third, what effect did the leadership of the school principal have on the adoption of ITI? It becomes apparent throughout the study that the principal was in every way most influential in the selection and implementation of ITI. Furthermore, the principal, a powerful woman, has been instrumental in sustaining the innovation over time. This principal was also canny enough to take a faithful cadre of educators with her to form the nucleus of a new culture in the school. Lorraine and Leigh were with Dr. Howell at her previous assignment. Leigh was with her in the assignment prior to that--in fact, in 14 years of teaching, Leigh has never worked for another principal. Of my key informants, only Judy DeAnza came to Orangecrest never having worked for Dr. Howell before. Dr. Howell's ability to attract and retain top quality teachers has undoubtedly contributed to the success of the program. This strong cadre supported the establishment of the innovative ITI program.

Four, what pedagogical and epistemological issues had to be addressed by teachers in order to make the change? In interviews with the teachers, it became apparent that my three key informants were struck by Kovalik's ITI with a sense of familiarity and rightness. Each stated that there was a "sense of recognition" that what Kovalik had systematized reflected and articulated their already formed beliefs about teaching and learning. For them, as for Dr. Howell, there was no wrench of cognitive dissonance, and very few pedagogical or epistemological issues with which to grapple. This is not surprising in view of the fact that teachers at Orangecrest are "self selected." They chose to go to Orangecrest, they chose to implement ITI, and they wanted to be part of a "winning team." There is a cachet about working with Dr. Howell, a "can you cut it?" mystique.

In looking at the program itself, there is little cause for cognitive dissonance. The program is structured for the teacher so that traditional hierarchical school discourse patterns are not radically altered. The teacher remains in control. ITI is far from being student centered, although limited choices are offered. In fact, the painstakingly structured curriculum is implemented in a topdown manner. The individual teacher may allow occasional departures from the daily, weekly, monthly, and yearly plans, but there is little time available for students to follow tangential interests or to divert the course of study to something that might interest them more.

What differs from traditional curriculum is the ITI emphasis on the wholeness and connectedness of learning, and the emphasis on a community of inquiry. The enactment of

these aspects of ITI require structural changes only--collaborative or group work, allowing students to interact with each other, group projects-- and many of these structural changes are not at all controversial.

Five, what effect has ITI had on academic achievement and on the school culture? While no figures have been specifically collected to examine this issue, the evidence of district and state testing speaks to the issue. Figure 1 examines the Stanford Achievement Test data on Reading Comprehension by ethnic group from 1990-91 through 1992-93. Figure 2 examines the Stanford Achievement Test data on Total Mathematics by ethic group from 1990-91 through 1992-1993. It is clear that on standardized achievement measures, Orangecrest scores well above district averages. On the CLAS test administered in 1993, Orangecrest scored above "100 other similar schools" on every measure. How strongly ITI figures in this academic "excellence" is open to interpretation.

A final question arises, one not asked in the study. What would happen if Dr. Howell left Orangecrest? Do successful innovations often rely on the charisma and force of personality of one person? Evidence suggests that Orangecrest could not have come into existence as an ITI school without Dr. Howell, and that without her presence it probably would not have continued to function as a school totally committed to ITI. It is unlikely that a group of teachers, however dedicated, could have sustained the innovation alone. In this case, the hierarchical structures of governance in our schools has supported an innovation, but the structure often operates to the detriment of such innovations. Worthwhile educational innovations often fail to persist over time (Cuban, 1984; Goodlad, 1984, Sarason, 1972). It might be said that schools tend to "marry" innovations in a kind of serial monogamy, and without pre-nuptial agreements. ITI is one such example. No evaluations of the program were demanded before its implementation, and apparently none have been attempted by the district in five years.

As with any piece of research, there are limitations which ought to be pointed out. A case study presents a specific case, and does not claim to generalize to other such cases. Although every effort has been made to support the validity of this report with empirical data from multiple sources, the qualitative researcher serves as the primary instrument of "measurement" in his or her study, and, like any instrument, is therefore subject to error. Each researcher views the data and conducts the analysis of evidence to construct meaning from a theoretical perspective, or bias. The reader should be aware that he/she also reads the analysis from a theoretical perspective, or bias, and constructs meaning accordingly.

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Figure 1. Stanford Achievement Test For Reading Comprehension By Ethnic Group

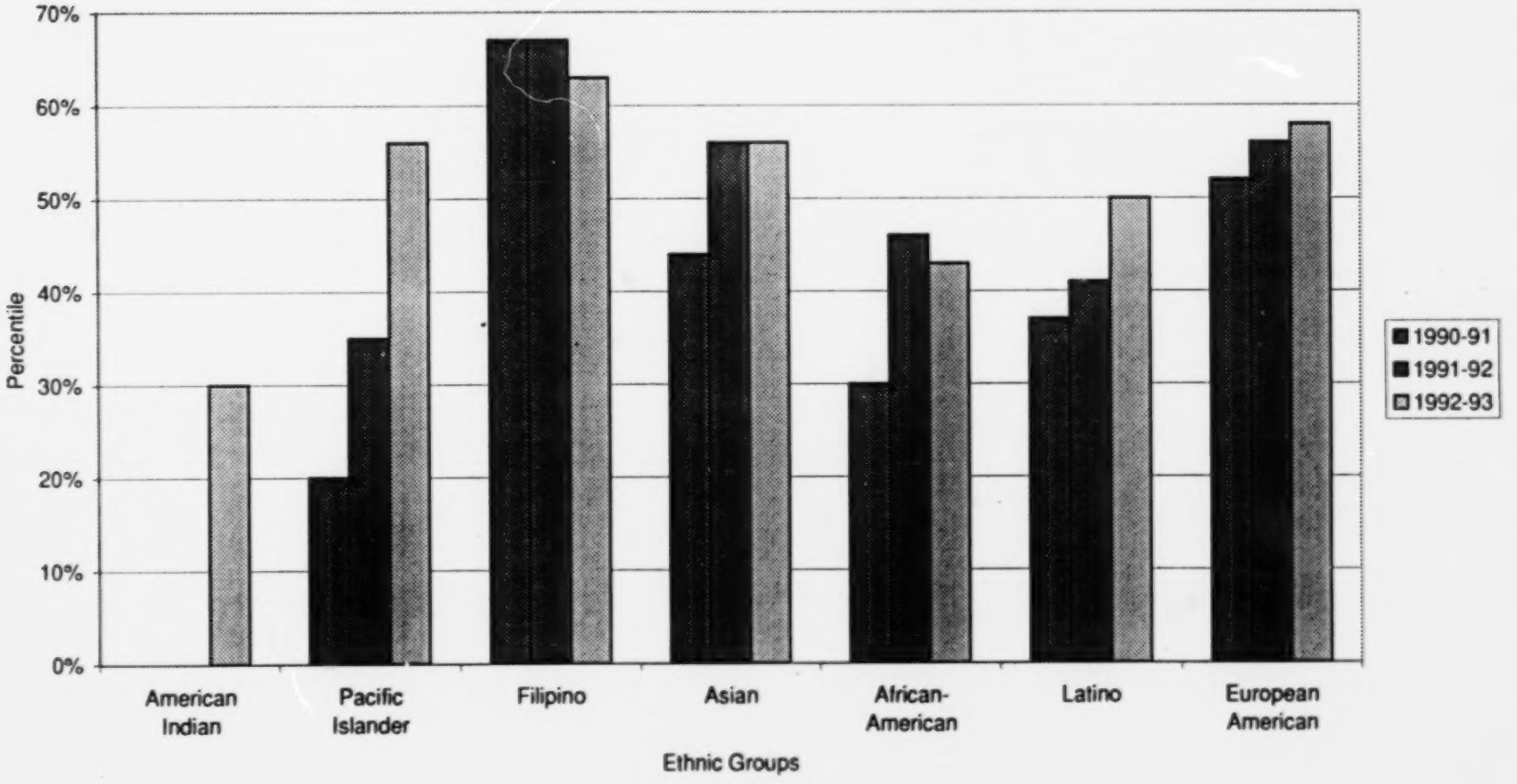
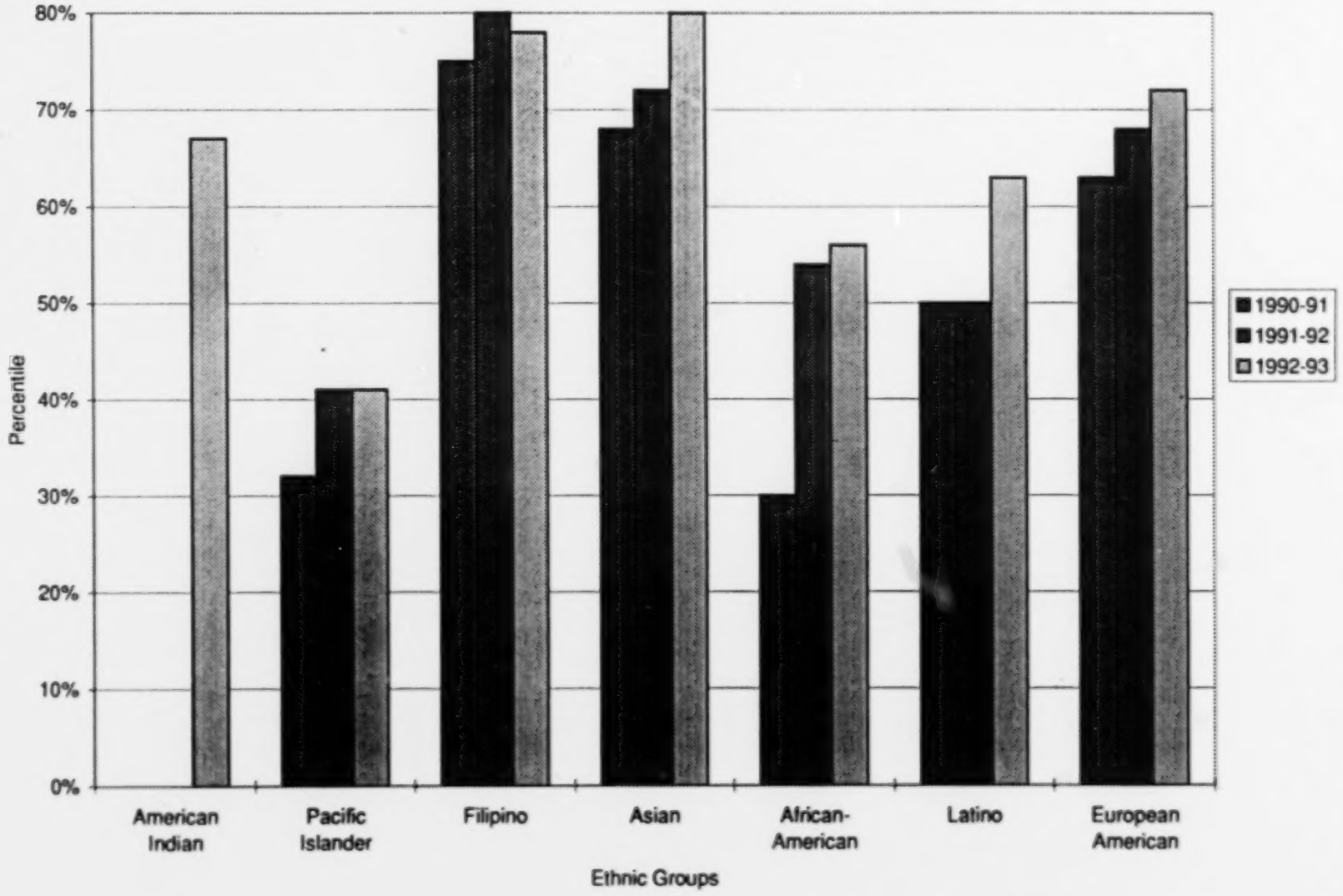


Figure 2. Stanford Achievement Test for Total Mathematics by Ethnic Group



We Are All Alike, We Are All Different

4.2.1 Life Science: Attributes/Classification every month.

Compare/Contrast throughout the year

Kindergarten

Me And My Friends

Mega Skills:
- Confidence
- Responsibility

- We Are All Alike, We Are All Different
- All I Am
- My Five Senses
- Bright Eyes, Brown Skin
- Here Are My Hands

- 5 senses
- body; health
- "All About Me" (P.A.M. draws A Man monthly)
- Clothing
- Friendship "Shake A Friend's Hand"

My Family

Mega Skills:
- Teamwork
- Caring

"The More We Get Together"

- What Families Look Like
- Jobs
- Analysis: Character + behavior.
- Three Billy Goats Gruff
- Three Bears
- Three Little Pigs
- The Napping House

My Living World

"He's Got the Whole World In His Hands"

- Animals
- Insects
- The Very Busy Spider
- The Very Hungry Caterpillar

My Ancestors

Mega Skills:
- Respect
- Appreciation
- Motivation
- Common Sense

- Different Parts of the World
- Different Cultures
- Respect + Appreciation
- Different Holidays/ Customs
- Reach out to times past

My Growing World

- Everything Grows"
- Eating the Alphabet
- Little Red Hen
- How Plants Live

- Plants and Seeds
- What plants need to grow

My Community

- Katy + The Big Snow
- Curious George

Mega Skills:
- Problem Solving
- Effort + Initiative
- Perseverance
- Teamwork

- Jobs + Addresses
- Exploring Community; what goes on "Corner Grocery Store"
- Store
- Exchange

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SKILLS MAP- KINDERGARTEN
Theme: "We Are All Alike, We Are All Different"

"Me and My Friends"

Oral Language:
- -Speak in front of whole group

Reading:
- -Using library
- -Patterns in language
- -Using visual cues
- -Know authors and illustrators

Phonics:
- -Recognize capital letters
- -Initial consonant sounds

Writing:
- -Print name on paper
- -Different ways kindergarteners write
- -Language experience stories
- -Dictate words to teacher

Math:
- -Free exploration
- -Intro to pattern
- -Measuring, non-standard
- -Counting

"My Family"

Oral Language:
- -Speak in complete sentences
- -Recite poems

Reading:
- -Self-selecting
- -Main idea
- -Retell sequence
- -Sustained silent reading

Phonics:
- -Recognize capital letters
- -Initial consonant sounds

Writing:
- -Name on paper
- -Capital letters
- -Language experience stories
- -Dictate sentences
- -Observe many forms of written language

Math:
- -Patterns
- -Sorting and classifying
- -Graphing
- -Estimating
- -Measuring: linear, weight

"My Ancestors"

Oral Language:
- -Tell stories
- -Recite poems

Reading:
- -Retell main idea
- -Choral reading
- -Predicting outcomes
- -Use library resources

Phonics:
- -Predicting, sounds/rhyming patterns
- -Initial consonant sounds

Writing:
- -Capital letters
- -Connecting letter and sound
- -Language experience stories
- -Copy numerals

Math:
- -Pattern
- -Money
- -Counting
- -Shapes
- -Time
- -Measuring
- -Graphs
- -Greater than, less than

"My Community"

Oral Language:
- -Observe and report
- -Give oral directions

Reading:
- -Characters
- -Compare/Contrast
- -Story problem
- -Sequence of events

Phonics:
- -Initial consonant sounds

Writing:
- -Capital and lower case letters
- -Connecting letters and sounds
- -Language experience stories

Math:
- -Sorting and classifying
- -Time
- -Temperature
- -Shapes
- -Measuring liquids
- -Graphs
- -Equations with missing numerals

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"My Growing World"

Oral Language:
- -Retell stories in own words
- -Give descriptions
- -Ask and answer questions

Reading:
- -Following directions
- -Plot
- -Sequence of events
- -Setting

Phonics:
- -Initial and final consonants
- -Classifying and categorizing sounds

Writing:
- -Capital and lower case letters
- -Connecting letter and sound
  - final consonants
- -Recognize many forms of written
  - language

Math:
- -Fractions
  - Whole, half
- -Time
- -Seasons
- -Calendar
- -Number concepts
- -Measuring
- -Graphs

"My Living World"

Oral Language:
- -Recite poems
- -Descriptions
- -Respond orally to 5 W questions

Reading:
- -Classifications
- -Cause and effect
- -Reality vs. fantasy
- -Detail

Phonics:
- -Initial and final consonants
- -Sight vocabulary

Writing:
- -Capital and lower case letters
- -Connecting letter and sound
  - final and middle consonants
- -Language experience

Math:
- -Counting 0-20
- -Number concepts
- -Graphs
- -Measurement; length/weight/volume
- -Time
- -Money

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Climb Aboard Our Magic Schoolbus

The Magic Schoolbus Inside the Body

- Me
- Mammals
- Nervous System
- Skeletal System
- Care of My Body

The Magic Schoolbus At the Waterworks

- family
- community
- careers
- city / country
- transportation
- watercycle

Mrs.
First Grade
1994-1995

The Magic Schoolbus Lost in the Solar System

- The Sun
- Night / Day
- Space Travel
- Simple machines

The Magic Schoolbus On the Ocean Floor

- Seashore
- crustaceans
- ocean zones
- ocean floor
- fish
- shipping

The Magic Schoolbus Inside the Earth

- Ecosystems
- Layers of Earth
- Landforms
- Reptiles
- Amphibians
- Plants

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Climb Aboard the Magic Schoolbus	Inside the Body	To the Waterworks	Inside the Earth	On the Ocean Floor	Lost in the Solar System
Literature	Mary Wore Her Red Dress The Three Bears Ira Sleeps Over Poems (core)	Pumpkin, Pumpkin Mike Mulligan & the Steam Shovel Poems	Frederick (core) Over in the Meadow Hare and the Tortoise Poems	Magic Fish Chicken Little Poems	Tico and the Golden Wings (core) Poems
Reading Skills	Character/Setting Prediction/Retell Memorization Compare/Contrast Main idea/theme	Setting Details Sequence Drawing Conclusions	Cause/effect Character's reasons Inference Summarization Analyzing	Realism/Fantasy Folktales/Fairy tales Problem/Solution Fiction/Non-fiction	Fact/Opinion Contractions Review of previous skills
Word Study	Rhyming Words Color Words Word bank	High frequency words Number words	Prepositions Theme words Compound words Days of Week	Blends, Digraphs opposites Silent letters Month names	Suffixes Synonyms Antonyms
Phonics Spelling Penmanship	M, S, F, T, B, C, R short sound of /a/ Sequence of sound ABC order	L, P, O, D, G, N, I, W ABC order to 1st letter	H, J, K, V, U, E, Y Sight words	X, Z, Q Long vowels	Syllables ABC order (2-3rd letter)
Writing/ Grammar	Punctuation (.) Kinds of sentences Capitalization (Names, Beginning of Sentences) Pattern Writing Writing w/o help	Punctuation (?) Nouns/Pronouns Write simple sentences Create a title	Punctuation (!) Use of am, is, are, was, were Writing questions Sentence expansion Write a friendly letter	Verbs Power writing Writing to a prompt Write a report	Composing a paragraph Write rhymes Write cinquain Write a story Author's Conference Sentence Combining

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Aboard the Magic Schoolbus	Body	Waterworks	Inside the Earth	On the Ocean Floor	Lost in the Solar System
Math	Number recognition & writing Counting by 1's sorting/Classifying Patterns Greater/Lesser More/Less	Number Words (1-10) Counting by 5's. Money (Rec & Value of coins) Addition in a Week	Counting by 2's Subtraction in A Day Number Families Time to Hour Geometry	Cardinal Numbers 1st-10th Counting by 10's Place Value Money Measurement Time to ½ hr.	Calculators Place Value Add Subtract (11-19) Temperature Fractions 2-3 digit (+, -)
Social Studies	Feelings Megaskills Rules for Life Super 8 Cooperative Learning	Community City vs. country Map Skills Susan B. Anthony	Presidents Patriotic symbols Post Office Ben Franklin Martin Luther King Jr.	Goods/Services Pollution/ Care of our Earth	Flag Day Cinco de Mayo
Science	Me as a person Nervous system (5 senses) Skeletal System Care of System	Simple Machines (Investigations) Water Cycle	Eco-systems Layers of Earth Landforms Reptiles Amphibians Plants	Ocean Fish Mammals Pollution	The Sun Day/Night Space Travel
VAPA	Color Values Art techniques Puppets	Dramatization of stories Reader's Theater Choral Reading	Shape (clay) Program presentation	Line Continuation of previous skills	Space (Construction)
Physical Education	Basic Movements Tetherball	4-Square Ball skills	Parachute Jump rope	Net Ball Line-up Kickball	Ball games Dancing

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THEME MAP
"THE I.D.E.A. COMPANY: THEME PARK DESIGN"

	Main Street	Lost & Found	Town Square
Soc. Studies:			
	Teambuilding Geography Map Skills	Paleontological Discoveries Early Humans Tools & Culture	First Civilizations Mesopotamia/Sumer Fertile Crescent
Science:			
	Biomes Environmental Impact	Geology Plate Tectonics Geological Time	Natural Resources
Literature:			
	Hatchet Around the World In 80 Days Anthology	Maroo of the Winter Caves Toolmaker	Gilgamesh
Math:			
	Place Value Basic Operations	Integers Time Measurements	Fractions

	People Mover	River Cruise	Himalayan Bobsleds
Soc. Studies:			
	Foundations of Western Ideas/ Hebrews	Egypt Daily Life, Religion, Social Structure	Ancient India Buddhism, Hinduism
Science:			
	Cells & Genetics	Chemical Change Properties of Matter	Body Systems
Literature:			
	Joshua and the Promised Land	Golden Goblet	Just So Stories The Cat Who Went to Heaven Ramayana
Math:			
	Decimals	Geometry Measurement	Patterns

	China Shop & Gift Emporium	Zeus' Revenge	Pirates of the Mediterranean
Soc. Studies:			
	Ancient China Confucianism "Silk Road"	Ancient Greece City/States	Ancient Rome Expansion
Science:			
	Nervous System	Exploring Space	Family Life
Literature:			
	The Great Wall	Greek Mythology The Bronze Bow	Pompeii
Math:			
	Logic	Probability & Statistics	Algebra

SKILLS MAP
"THE I.D.E.A. COMPANY: THEME PARK DESIGN"

	Main Street	Lost & Found	Town Square
Reading Comp:			
	Main Idea	Supporting Details	Character Analysis
	Drawing Conclusions	Cause & Effect	Motivation
Writing:			
	Capitalization	Forming plurals	Run-on sentences
	Punctuation	Complex sentences	Sentence fragments
	Sentence Structure	Compound words	Recognizing tenses
		Descriptive writing	Persuasive writing
Math:			
	Addition & Subtraction of whole numbers	Adding & Subtracting Integers	Recognize, read, write common, improper, and mixed fractions
	Recognizing names for numbers	Estimating & Converting	
	Comparing & Ordering	Time Measurements	Add & subtract fractions
	Rounding & Estimating		

	People Mover	River Cruise	Himalayan Bobsleds
Reading Comp:			
	Sequencing of events	Making Predictions	Identifying reality & fantasy
	Inferential details	Making Comparisons	
	Fact & Opinion		
Writing:			
	Informative reports	Narrative writing	Dialogue Writing
Math:			
	Computation of decimals	Angles, lines, shapes	Identify, explain, reproduce, and extend patterns
	Rounding & estimating of decimals	Congruency, symmetry	
	Ordering decimals		

	China Shop & Gift Emporium	Zeus' Revenge	Pirates of the Mediterranean
Reading Comp:			
	Compare & Contrast	Author's Purpose	Classifying
		Mood/Tone	Skill Review
Writing:			
	Poetry	Biographical Sketch	Essay
			Audience awareness
Math:			
	Problem Solving	Data and Outcomes	Variables
	Organizing ideas	Graphing	Number sentences
	Similarities & Differences		Equalities & Inequalities